

PATENT

D cket No. D0905-00016

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: David Stucky and
Randall Elinski

Examiner: B. Copenheaver

Serial No.: 09/055,098

Group Art Unit: 1771

Filed: April 3, 1998

For: FOAMED POLYMER-FIBER
COMPOSITE



I, GAIL ANN DALICKAS, REGISTRATION NO. 40,979 CERTIFY
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U.S. POSTAL SERVICE AS FIRST CLASS MAIL IN AN ENVELOPE
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ON February 7, 2000
Gail Dalickas
GAIL ANN DALICKAS

Assistant Commissioner for Patents
Washington, DC 20231

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Sir:

DECLARATION UNDER 37 C.F.R. § 1.132

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I, David Stucky, hereby declare as follows:

1. I am a named inventor in this application. I am an employee of CertainTeed Corporation, the assignee of this application. I have been doing research in the area of materials engineering for 7 years, primarily in materials development, formulation and testing.
2. I have reviewed the Office Action dated October 6, 1999, for this application, and the references cited in the Office Action.
3. For certain building applications utilizing synthetic materials as replacements for wood, such as decks and flooring, it is desirable that any screws inserted into the synthetic material be embedded so that the surface of the head of the screw is flush with the surface of the material.

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Because the action of inserting a screw into a material necessarily displaces some material to make way for the screw, obtaining a configuration in which the screw head is flush with the surface of a synthetic material without pre-drilling the screw hole may be difficult. Furthermore, screw failure, such as bending or breaking, can result. Screws can also fail by stripping out of the material.

4. Before the present invention, conventional ways to prevent screw failure in synthetic woods include countersinking the screw, providing a recess into which the screw head can fit. In addition or in place of countersinking, the synthetic wood could be pre-drilled before the screw is inserted. The additional steps of countersinking and/or pre-drilling often increase the time and, therefore, the cost, of building.

5. The composite building materials of this invention provide a way to address the problem of reducing screw failure without countersinking of screws or pre-drilling. The inventors were motivated to develop materials that perform in a way similar to wood, and in particular to reduce the need for countersinking or pre-drilling.

6. Experiments were performed by me or under my supervision, to evaluate the effect of material composition of composite building materials on the ability to drive in a wood screw without pre-drilling or countersinking. Exhibit A, attached hereto, is a table of data showing the rate of screw failure obtained by screwing stock square head 3-inch deck screws into boards made using the composite building materials of the invention. The numbers in Column 1 of the table, labeled "Run #", correspond to the numbers in Column 1 of Table 1 of the present patent application, labeled "Formulation". For example, Run 1 of Exhibit A corresponds to Formulation 1 of Table 1 of the patent application.

7. Exhibit C attached hereto is a graphic representation of the relationship between screw failure and blowing agent loading. A decrease in screw failure occurred with increased blowing agent loading.

8. Exhibit D attached hereto is a graphic representation of the relationship between screw failure and acrylic modifier loading. A general trend of decrease in screw failure occurred with

increased acrylic modifier loading.

9. The data in Exhibit A show that screw failure was reduced when the composite material had a specific gravity of 1.07 g/cc, and continued to decrease as the specific gravity decreased. The relationship between specific gravity and screw failure is depicted in Exhibit B attached hereto.

10. The references cited in the Office Action do not suggest the relationship between reduction in screw failure and blowing agent loading or between reduction in screw failure and specific gravity that were observed in the formulations that were tested in connection with this patent application.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

David Stucky

David Stucky

2/3/00

Date